

REMARKS/ARGUMENTS

This is a Response to the Office Action mailed April 10, 2006, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire July 10, 2006. Claims 4-6 have been previously canceled. No new matter has been added to the application. No fee for additional claims is due by way of this Amendment. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090. Claims 1-3 are pending.

Foreign Priority

Applicant submits herewith a certified English translation of the foreign priority document, Japanese Patent Application No. 2003-70664, filed on March 14, 2003.

Rejections Under 35 U.S.C. § 103

Claims 1-2 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chou et al. (W. Chou, M.A. Neifeld, 'Interleaving and error correction in volume holographic memory systems', Appl. Opt., vol. 37, no. 29, October 10, 1998, pp. 6951-6968.) in view of Curtis et al. (U.S. Patent No. 6,163,391) and Bernal et al.

The exemplary embodiments of Applicant's invention are directed to a holographic recording and reproducing apparatus for recording data as phase information of light in a holographic recording medium by projecting a signal beam and a reference beam onto the holographic recording medium. A pinhole is disposed at a confocal point of a Fourier transform lens and a reverse Fourier transform lens, such that the pinhole is disposed either between the holographic recording medium and the Fourier transform lens or between the holographic recording medium and the reverse Fourier transform lens. The focal length of the Fourier transform lens remains *unchanged* and the pinhole is disposed at the confocal point of the Fourier transform lens and the reverse Fourier transform so as to serve as a spatial filter to the holographic recording and reproducing apparatus and remove a noise component when data are recorded or data are reproduced. More specifically, according to claim 1, the holographic recording and reproducing apparatus includes, *inter alia*, "a spatial light modulator, a Fourier

transform lens, a reverse Fourier transform lens, a charge coupled device (CCD) image sensor, and a pinhole disposed at a confocal point of the Fourier transform lens and the reverse Fourier transform lens, the holographic recording medium being disposed between the Fourier transform lens and the reverse Fourier transform lens, and the focal length of the Fourier transform lens and focal length of the reverse Fourier transform lens being different from each other, and the pinhole being disposed between the holographic recording medium and the Fourier transform lens or between the holographic recording medium and the reverse Fourier transform lens" (emphasis added).

Curtis teaches that "when the Fourier transform of an object is recorded holographically, the exposure in significant parts of the hologram that are displaced from the optical axis often tends to be much weaker in intensity than parts lying at or near the optical axis" (col. 2, lines 33-38).

For solving this problem, Curtis teaches a holographic recording apparatus including power optics 365 that adds convergence or divergence to an object beam before the object beam enters the Fourier transform lens. The power optics 365 is disposed in the path of the object beam 370 at a position prior to the object 375 (Fig. 6) or at a position posterior to the object (Fig. 7; Col. 10 lines 10-13), thereby redistributing the intensity of the object beam at the Fourier plane, where the recording medium is situated. As a result, the focal length of the Fourier transform lens is repositioned so as to allow for the recording medium to be disposed at a confocal point of the Fourier transform lens.

Curtis does not teach or suggest having the pinhole disposed at the confocal point and instead teaches having the recording medium located at the confocal point upon repositioning of the focal point of the Fourier transform lens.

Bernal teaches that both the holographic recording material and aperture, corresponding to the pinhole of the present invention, are disposed at the Fourier plane while Chou fails to disclose a pinhole disposed within the holographic recording and reproducing apparatus. Thus, Bernal and Chou fail to cure the deficiencies of Curtis.

Chou, Curtis and Bernal do not teach or suggest all the limitations of independent claim 1. Thus, claim 1 is allowable as is claim 2, which depends therefrom.

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Chou et al. in view of Curtis et al. and Bernal et al.

As discussed above, Chou, Curtis and Bernal do not teach or suggest all the limitations of independent claim 1. Thus, claim 1 is allowable as is claim 3, which depends therefrom.

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Waldman et al. (U.S. Patent Application Publication US 2005/0134948 A1) in view of Bernal et al.

The rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Waldman in view of Bernal is now moot, in view of the submission of a certified English translation of the foreign priority document, which predates the Waldman reference (filed on October 8, 2004).

Claims 2-3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Waldman et al. (U.S. Patent Application Publication US 2005/0134948 A1) in view of Bernal et al.

The rejection of claims 2-3 under 35 U.S.C. § 103(a) as being unpatentable over Waldman in view of Bernal is now moot, in view of the submission of a certified English translation of the foreign priority document, which predates the Waldman reference (filed on October 8, 2004).

Conclusion

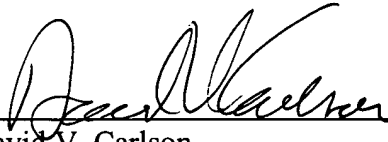
Overall, the cited references do not singly, or in any motivated combination, teach or suggest the claimed features of the embodiments recited in independent claim 1, and thus such claim is allowable. Because the remaining claims depend from the allowable independent claims, and also because they include additional limitations, such claims are likewise allowable. If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found.

In light of the above amendments and remarks, Applicant respectfully submits that all pending claims are allowable. Applicant, therefore, respectfully requests that the

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Examiner reconsider this application and timely allow all pending claims. Examiner Lavarias is encouraged to contact Mr. Carlson by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is encouraged to contact Mr. Carlson by telephone to expediently correct such informalities.

Respectfully submitted,
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RS:vsj

Enclosures:

Declaration of certified English translation of foreign priority document
Certified English translation of foreign priority document

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